

8. ROAD WIDENING AND IMPROVEMENTS TO ROADS AND DRAINS
FROM SINDHI COLLEGE MAIN ROAD TO DEAD END (MUNISWAMY
GOWDA LAYOUT) MAIN ROAD IN WARD
NO.7, BYATARAYANAPURA.



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 8.Road widening and Improvements to roads and drains from Sindhi College Main Road to Dead End (Muniswamy Gowda Layout) Main road in Ward No.7,Byatarayanapura

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Est Cost: 60.0Lakh	
				m	m	m		Rate in Rs.	Amount in Rs.
1	KSRRB M200-14.2. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per specifications. ii) Dismantling brick/Tile work B. In cement mortar. MORTH Specification No. 202 (P.No.137, I.No.18.23 of PW,P&IWD SR 2016-17)								
	Compound	Cum	1.00	120.0	0.20	1.50	36.00		
							36.00	375.39	13514.04
2	KSRRB M200-12.2. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per specifications. i) Lime /Cement Concrete. I. By Manual Means :B. Cement Concrete Grade M-15 & M-20. MORTH Specification No. 202. (P.No.137, I.No.18.18 of PW,P&IWD SR 2016-17)								
	Existing RCC Drain	Cum	1.00	60.0	0.90	0.15	8.10		
			2.00	60.0	0.15	0.70	12.60		
							20.70	513.19	10623.03
3	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWD SR 2016-17)								
	Desilt	Cum							
	Sindhi college Road								
	New Drain								
	Ch 0-160 LHS		1	160.0	1.30	1.00	208.00		
	ch 350-420 LHS		1	70.00	1.30	1.00	91.00		
	Desilt								
	Ch 0-160 RHS		1	160.00	0.60	0.50	48.00		
	Ch 160-350		2	190.00	0.60	0.50	114.00		
	kuvempu Road (SMS Elite Apartment)								
	1st Cross(L Shape RD)		2	115.00	0.60	0.50	69.00		
							530.00	202.92	107547.60
4	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWD SR 2016-17)								
	Sindhi college Road	Sqm							
	Ch 0-160 RHS		1	160.00	1.80		288.00		
	Ch 160-350		2	190.00	1.80		684.00		
	kuvempu Road (SMS Elite Apartment)								
	1st Cross(L Shape RD)		2	115.00	1.80		414.00		
							693.00		
	Consider 20% for Damaged and Missing Slabs						-173.25		
							519.75	80.56	41871.06
5	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortar (1:6) including fixing curing etc., Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWD SR 2016-17)								
	For BS Slab Drain	Sqm							

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Ch 0-160 LHS		1	160.00	1.80		288.00		
	ch 350-420 LHS		1	70.00	1.80		126.00		
	Consider 20% for Damaged and Missing Slabs						173.25		
							587.25	665.68	390920.58
6	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Flagging Course / Raising of BS Drain	Cum							
	Ch 0-160 LHS		2	160.00	0.30	0.10	9.60		
	Ch 160-350		2	190.00	0.30	0.10	11.40		
	ch 350-420 LHS		2	70.00	0.30	0.10	4.20		
							25.20	5348.76	134788.75
7	KSRB 5-11 : Providing and constructing load bearing wall with solid concrete blocks of size 400x150x200 mm having block density not less than 1800 kg/m3 and having a minimum average compressive strength 5.00 N/mm2 confirming to IS 2185 (Part) : 2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials, labour charegs, scaffolding, curing complete as per specifications. KBS No.5.4 (P.No.12, I.No.5.27.2 of PW,P&IWTD S.R 2016-17)								
	Flagging Course / Raising of BS Drain	Sqm							
	Ch 0-160 LHS		1.00	160.00		0.40	64.00		
	Ch 160-350		1.00	190.00		0.20	38.00		
	ch 350-420 LHS		1.00	70.00		0.40	28.00		
							130.00	880.86	114511.80
8	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortar 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	Flagging Course / Raising of Drain and C	Cum							
	Ch 0-160 LHS		1.00	160.00	0.45	0.45	32.40		
	Ch 160-350		1.00	190.00	0.45	0.23	19.67		
	ch 350-420 LHS		1.00	70.00	0.45	0.45	14.18		
							66.24	4438.22	293987.69
9	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	Flagging Course / Raising of Drain and C	Sqm							
	Ch 0-160 LHS		1.00	160.00		0.45	72.00		
	Ch 160-350		1.00	190.00		0.23	43.70		
	ch 350-420 LHS		1.00	70.00		0.45	31.50		
							147.20	102.82	15135.10
10	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
	Ch 0-160 LHS		2.00	160.00	0.30	0.075	7.20		
	Ch 160-350		2.00	190.00	0.30	0.075	8.55		
	ch 350-420 LHS		2.00	70.00	0.30	0.075	3.15		
							18.90	5767.46	109004.99

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
11	Providing and fixing RCC Precast cover slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Ch 0-160 LHS		1.00	160.00	1.20	--	192.00		
	Ch 160-350		1.00	190.00	1.20	--	228.00		
	ch 350-420 LHS		1.00	70.00	1.20	--	84.00		
							504.00	1738.00	875952.00
15	Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation etc.,complete. (P.No.25, I.No.5.30 of PW,P&IWT D S.R 2016-17)								
		No.							
	New Kerbs								
			1	420.00	--	/0.45	933.00		
							933.00	331.78	309550.74
16	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (P.No.182, I.No. 24.1 of PW,P&IWT D SR 2016-17)								
	Kerb Paiting	Sqm							
			1	420.00	--	0.35	147.00		
							147.00	63.60	9349.20
12	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWT D S.R 2016-17)								
	Road Portion	Cum							
	Sindhi college Road								
	Ch 0-160m LHS Widening Portion		1	160.00	5.00	0.20	160.00		
	UGD Cutting		1	90.00	1.85	0.45	74.93		
	Bad Reaches		7	2.00	2.50	0.23	8.05		
			8	1.50	2.00	0.23	5.52		
			6	1.50	1.00	0.23	2.07		
							250.57	164.76	41283.09
13	KSRRB M300- Construction of Embankment with Material Gravel/ Murrum. KSRRB M300-53. Construction of embankment with approved material Gravel/Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement Table 300- 2 complete as per specifications.(Including cost of gravel / murrum, watering charges & compaction by vibratory roller to 95% of proctors density) MORTH Specification No. 305 (P.No.147, I.No.19.60 of PW,P&IWT D S.R 2016-17)								
	Sindhi college Road								
	Ch 0-160m LHS Widening Portion		1	160.00	7.00	0.90	1008.00		
							1008.00	320.12	322680.96
14	KSRRB M400-6.1. Construction of granular sub-base by providing close graded crushed stone aggregates of granite / trap / basalt material, mixing in a mechaical mix plant at OMC, carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications. A. Plant Mix Method. - For Grading II Materiall(P.No.155, I.No.20.4.2 of PW,P&IWT D S.R 2016-17)								
	Road Portion	Cum							
	Ch 0-160m LHS Widening Portion		1.00	160.00	5.00	0.15	120.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	UGD Cutting		1.00	90.00	1.85	0.15	24.98		
							144.98	1665.26	241421.07
15	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Sindhi college Road								
	Ch 0-160m LHS Widening Portion		1.00	160.00	5.00	0.25	200.00		
	UGD Cutting		1.00	90.00	1.85	0.25	41.63		
	Bad Reaches		7.00	2.00	2.50	0.23	8.05		
			8.00	1.50	2.00	0.23	5.52		
			6.00	1.50	1.00	0.23	2.07		
							257.27	1768.08	454865.10
16	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Sindhi college Road								
	Ch 0-160m LHS Widening Portion		1	160.00	5.00	--	800.00		
	UGD Cutting		1	90.00	1.85	--	166.50		
	Bad Reaches		7	2.00	2.50	--	35.00		
			8	1.50	2.00	--	24.00		
			6	1.50	1.00	--	9.00		
							1034.50	27.56	28510.82
17	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Ch 0 -420		1	420.00	5.00	--	2100.00		
	kuvempu Road (SMS Elite Apartment)								
	1st Cross(L Shape RD)		1	115.00	6.00	--	690.00		
	Deduct prime coat						-234.50		
							2555.50	3.18	8126.49
18	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	Road Portion	Sqm							
	For laying DBM								
	Bad Reaches								
	Ch 0 -420		1.00	420.00	5.00	--	2100.00		
	Ch 0-160m LHS Widening Portion		1.00	160.00	5.00	--	800.00		
	For Laying BC								
	Sindhi college Road								
	Ch 0 -420		1.00	420.00	5.00	--	2100.00		
	Ch 0-160m LHS Widening Portion		1.00	160.00	5.00	--	800.00		
	kuvempu Road (SMS Elite Apartment)								
	1st Cross(L Shape RD)		1.00	115.00	6.00	--	690.00		
							6490.00	12.72	82552.80

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
19	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No.165 of I.No.21.17.6 in PW,P&IWTD S.R 2016-17)								
	For laying DBM	Cum							
	Ch 0 -420		1.00	420.00	5.00	0.05	105.00		
	Ch 0-160m LHS Widening Portion		1.00	160.00	5.00	0.05	40.00		
							145.00	7120.02	1032402.90
20	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Sindhi college Road								
	Ch 0 -420		1.00	420.00	5.00	0.04	84.00		
	Ch 0-160m LHS Widening Portion		1.00	160.00	5.00	0.04	32.00		
	kuvempu Road (SMS Elite Apartment)								
	1st Cross(L Shape RD)		1.00	115.00	6.00	0.04	27.60		
							143.60	8118.54	1165822.34
21	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	695.00	0.10	--	139.00		
							139.00	542.72	75433.08
							Total Construction Cost		5879860.230
22							Cost towards Preparation of DPR LS		58799.00
23							Cost towards PMC / Third Party inspection LS		58799.00
								Sub Total	5997458.23
24							Miscellaneous and rounding off		2541.77
								Total	6000000.00

Certificate.

- 1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
- 2 The provisions made in the estimate are necessary and essential.
- 3 The workspot was inspected and work is found to be necessary.
- 4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

6000000.00

Technical Sanction

Accorded For 60.00 lakhs
Head of A/E P3158
"26" 29/18
CEN No. 29/18

KEY MAP – 8. Sindhi Collage



KEY MAP - 8. Kuvempu Road (Sindhi Collage)



9. IMPROVEMENTS TO ROADS AND DRAINS FROM
BHUVANESHWARINAGAR PARK VIA GOPALAPPA LAYOUT TO
COFEE BOARD LAYOUT PARK ROAD AND SURROUNDING
AREAS (CUBIC APARTMENTS AREA) IN WARD
NO 7 BYATAPAYANAPURA



BRUHAT BANGALORE MAHANAGARA PALIKE

**Project: 9.Improvements to roads and drains from Bhuvaneshwarinagar Park via Gopalappa Layout to
Cofee board Layout Park Road and Surrounding areas (Cubic Apartments Area) in Ward
No.7.Byatarayanapura**

								Est Cost: 65.0Lakh	
Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWD SR 2016-17)								
	New Drain	Cum							
	1st Main Road								
	LHS		1	160.00	0.80	0.70	89.60		
	RHS		1	170.00	0.80	0.70	95.20		
	Connecting Road From 1st Mn to 2nd Main		2	30.00	0.80	0.70	33.60		
	2nd Main Road								
	LHS		1	165.00	0.80	0.70	92.40		
	RHS		1	182.00	0.80	0.70	101.92		
	2nd Cross Road Balaji Layout		2	55.00	0.75	0.60	49.50		
	1st Cross Road Balaji Layout		2	50.00	0.75	0.60	45.00		
	3rd Cross Road Balaji Layout		2	50.00	0.75	0.60	45.00		
	2nd A Cross Road Balaji Layout		2	50.00	0.75	0.60	45.00		
	Culvert		2	10.00	1.60	1.20	38.40		
			2	7.00	1.60	1.20	26.88		
			1	8.00	1.60	1.20	15.36		
			1	6.00	1.60	1.20	11.52		
							689.38	202.92	139888.99
2	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortar (1:6) including fixing curing etc., Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWD SR 2016-17)								
	For BS Slab Drain	Sqm							
	1st Main Road								
	LHS		1	160.00		1.80	288.00		
	RHS		1	170.00		1.80	306.00		
	Connecting Road From 1st Mn to 2nd Main		2	30.00		1.80	108.00		
	2nd Main Road								
	LHS		1	165.00		1.80	297.00		
	RHS		1	182.00		1.80	327.60		
	2nd Cross Road Balaji Layout		2	55.00		1.35	148.50		
	1st Cross Road Balaji Layout		2	50.00		1.35	135.00		
	3rd Cross Road Balaji Layout		2	50.00		1.35	135.00		
	2nd A Cross Road Balaji Layout		2	50.00		1.35	135.00		
							1880.10	665.68	1251544.97
3	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWD S.R 2016-17)								
	For Bed	Cum							
	Culvert		2	10.00	1.60	0.15	4.80		
			2	7.00	1.60	0.15	3.36		
			1	8.00	1.60	0.15	1.92		
			1	6.00	1.60	0.15	1.44		
							11.52	5348.76	61617.72

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
4	KSRB 4-6.1: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, labour complete as per specifications. Specification No. KBS 4.6.2 (P.No.15, I.No.4.28 of PW, P&IWTD SR 2016-17)								
	New Culvert	Sqm							
			4	10.00	--	0.250	10.00		
			4	7.00	--	0.250	7.00		
			2	8.00	--	0.250	4.00		
			2	6.00	--	0.250	3.00		
							24.00	244.86	5876.64
5	KSRB 4-6.4: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surfaces such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2 (P.No.15, I.No.4.31 of PW,P&IWTD SR 2016-17)								
	Side Walls	Sqm							
	New Culvert		8	10.00	--	0.90	72.00		
			8	7.00	--	0.90	50.40		
			4	8.00	--	0.90	28.80		
			4	6.00	--	0.90	21.60		
							172.80	310.58	53668.22
6	Providing and laying cement concrete using 20mm and downsize granite coarse aggregates and fine aggregates of ready mixed concrete (RMC) for RCC works laid in 15cms thick layers and well compacted vibrating, curing, finishing with necessary cement mortar, with all lead and lifts etc., complete (exclusive of cpost of steel and fabricaton charges) Ready Mixed Cement Concrete M 20 for Raft foundation, Column, Footing, main and secondary beams. (P.No.18, I.No.4.48 of PW, P&IWTD SR 2016-17)								
		Cum							
	Bottom Slab								
	New Culvert		2	10.00	1.40	0.25	7.00		
			2	7.00	1.40	0.25	4.90		
			1	8.00	1.40	0.25	2.80		
			1	6.00	1.40	0.25	2.10		
	Side Walls								
	New Culvert		4	10.00	0.25	0.90	9.00		
			4	7.00	0.25	0.90	6.30		
			2	8.00	0.25	0.90	3.60		
			2	6.00	0.25	0.90	2.70		
							38.40	6231.74	239298.82
7	KSRB - 4.9.2: Providing TMT steel reinforcement Fe500 for R.C.C work including straightening, cutting, bending, hooking, palcing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining memebtrs wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3. (P.No.17, I.No.4.46.2 of PW, P&IWTD SR 2016-17)								
	Consider 80Kgs/cum for culvert	Tonne		38.40	0.080	--	3.08		
							3.08	64243.42	197869.73
8	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Culvert Slab	Sqm							
	New Culverts		2	10.00	1.50	--	30.00		
			2	7.00	1.50	--	21.00		
			1	8.00	1.50	--	12.00		
			1	6.00	1.50	--	9.00		

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
							72.00	4951.00	356472.00
9	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTDR S.R 2016-17)								
	Road Portion	Cum							
	1st Main Road		1	170.00	10.30	0.23	402.73		
	Connecting Road From 1st Mn to 2nd Main		1	30.00	8.50	0.23	58.65		
	2nd Main Road		1	190.00	9.50	0.23	415.15		
	2nd Cross Road Balaji Layout		1	55.00	5.50	0.23	69.58		
	1st Cross Road Balaji Layout		1	50.00	5.80	0.23	66.70		
	3rd Cross Road Balaji Layout		1	50.00	4.50	0.23	51.75		
	2nd A Cross Road Balaji Layout		1	50.00	6.00	0.23	69.00		
							1133.56	164.76	186764.52
10	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTDR SR 2016-17)								
	Road Portion	Cum							
	1st Main Road		1	170.00	10.30	0.23	402.73		
	Connecting Road From 1st Mn to 2nd Main		1	30.00	8.50	0.23	58.65		
	2nd Main Road		1	190.00	9.50	0.23	415.15		
	2nd Cross Road Balaji Layout		1	55.00	5.50	0.23	69.58		
	1st Cross Road Balaji Layout		1	50.00	5.80	0.23	66.70		
	3rd Cross Road Balaji Layout		1	50.00	4.50	0.23	51.75		
	2nd A Cross Road Balaji Layout		1	50.00	6.00	0.23	69.00		
							1133.56	1768.08	2004215.92
11	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTDR SR 2016-17)								
	Road Portion	Sqm							
	1st Main Road		1	170.00	10.30	--	1751.00		
	Connecting Road From 1st Mn to 2nd Main		1	30.00	8.50	--	255.00		
	2nd Main Road		1	190.00	9.50	--	1805.00		
	2nd Cross Road Balaji Layout		1	55.00	5.50	--	302.50		
	1st Cross Road Balaji Layout		1	50.00	5.80	--	290.00		
	3rd Cross Road Balaji Layout		1	50.00	4.50	--	225.00		
	2nd A Cross Road Balaji Layout		1	50.00	6.00	--	300.00		
							4928.50	27.56	135829.46
12	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTDR SR of 2016-17)								
	Road Portion	Sqm							
	For Laying BC								
	1st Main Road		1.00	170.00	10.30	--	1751.00		
	Connecting Road From 1st Mn to 2nd Main		1.00	30.00	8.50	--	255.00		
	2nd Main Road		1.00	190.00	9.50	--	1805.00		
	2nd Cross Road Balaji Layout		1.00	55.00	5.50	--	302.50		
	1st Cross Road Balaji Layout		1.00	50.00	5.80	--	290.00		
	3rd Cross Road Balaji Layout		1.00	50.00	4.50	--	225.00		
	2nd A Cross Road Balaji Layout		1.00	50.00	6.00	--	300.00		
							4928.50	12.72	62690.52

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
13	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	1st Main Road		1.00	170.00	10.30	0.04	70.04		
	Connecting Road From 1st Mn to 2nd Main		1.00	30.00	8.50	0.04	10.20		
	2nd Main Road		1.00	190.00	9.50	0.04	72.20		
	2nd Cross Road Balaji Layout		1.00	55.00	5.50	0.04	12.10		
	1st Cross Road Balaji Layout		1.00	50.00	5.80	0.04	11.60		
	3rd Cross Road Balaji Layout		1.00	50.00	4.50	0.04	9.00		
	2nd A Cross Road Balaji Layout		1.00	50.00	6.00	0.04	12.00		
							197.14	8118.54	1600488.98
14	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	595.00	0.10	--	119.00		
	Center line		0.5	220.00	0.10	--	11.00		
							130.00	542.72	70553.60
	Total Construction Cost								6366780.088
15	Cost towards Preparation of DPR LS								63668.00
16	Cost towards PMC / Third Party inspection LS								63668.00
	Sub Total								6494116.09
17	Miscellaneous and rounding off								5883.91
	Total								6500000.00

Certificate.

- 1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
- 2 The provisions made in the estimate are necessary and essential.
- 3 The workspot was inspected and work is found to be necessary.
- 4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Tejus Consultant

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

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Technical Sanction
Accorded For ... 65.00 Lacs
Head of A/C ... P3158
CER NO : "27" Dt. 29/01/18

TA / CE (YNIQ)

10. IMPROVEMENTS TO DRAINS OF PAMPA EXTENSION IN
WARD NO 07 BYATARAYANAPURA.



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 10.Improvements to Drains of Pampa Extension in Ward No 07 Byatarayanapura

								Est Cost: =55.0Lakh	
Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Pampa Extension main road		1	700.00	0.60	0.60	252.00		
	5th c/s pampa extn		1	200.00	0.60	0.55	66.00		
	3rd main pampa extn		1	45.00	0.60	0.55	14.85		
	2nd main pampa extn		1	40.00	0.60	0.55	13.20		
	1st Cross		1	40.00	0.60	0.55	13.20		
	2nd Cross		1	30.00	0.60	0.55	9.90		
	3rd Cross		1	28.00	0.60	0.50	8.40		
	Cross Road		1	25.00	0.60	0.50	7.50		
	4th Cross		2	115.00	0.60	0.55	75.90		
	6th Cross		1	45.00	0.60	0.55	14.85		
	7th Cross		1	50.00	0.60	0.55	16.50		
	11th Cross		1	75.00	0.60	0.50	22.50		
	Chinnappa Layout								
	2nd main pampa extn		2	200.00	0.60	0.60	144.00		
	1st Cross		2	60.00	0.60	0.60	43.20		
	2nd Cross		1	60.00	0.60	0.60	21.60		
	Vinayaka layout								
	1st Cross		2	110.00	0.60	0.60	79.20		
	2nd Cross		2	100.00	0.60	0.60	72.00		
	3rd Cross		2	80.00	0.60	0.60	57.60		
							932.40	202.92	189202.61
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Pampa Extension main road	Sqm	1	700.00	1.80		1260.00		
	5th c/s pampa extn		1	200.00	1.80		360.00		
	3rd main pampa extn		1	45.00	1.80		81.00		
	2nd main pampa extn		1	40.00	1.80		72.00		
	1st Cross		1	40.00	1.80		72.00		
	2nd Cross		1	30.00	1.80		54.00		
	3rd Cross		1	28.00	1.80		50.40		
	Cross Road		1	25.00	1.80		45.00		
	4th Cross		2	115.00	1.80		414.00		
	6th Cross		1	45.00	1.80		81.00		
	7th Cross		1	50.00	1.80		90.00		
	11th Cross		1	75.00	1.80		135.00		
	Chinnappa Layout								
	2nd main pampa extn		2	200.00	1.80		720.00		
	1st Cross		2	60.00	1.80		216.00		
	2nd Cross		1	60.00	1.80		108.00		
	Vinayaka layout								
	1st Cross		2	110.00	1.80		396.00		
	2nd Cross		2	100.00	1.80		360.00		
	3rd Cross		2	80.00	1.80		288.00		
	Consider 50% of Above Qnty						2401.20		

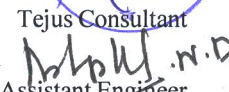
Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Consider 25% for Damaged and Missing Slabs						-600.30		
							1800.90	80.56	145080.50
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc., Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Consider 25% for Damaged and Missing Slabs						600.30		
							600.30	665.68	399607.70
4	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWD SR 2016-17)								
	Road Portion	Cum							
	Bad Reaches								
			6	2.50	1.80	0.23	6.21		
			6	1.50	1.20	0.23	2.48		
			8	1.30	0.95	0.23	2.27		
			10	10.00	0.50	0.23	11.50		
			5	1.20	0.60	0.23	0.83		
							23.29	164.76	3837.99
5	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density,complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWD SR 2016-17)								
	Bad Reaches	Cum							
			6	2.50	1.80	0.23	6.21		
			6	1.50	1.20	0.23	2.48		
			8	1.30	0.95	0.23	2.27		
			10	10.00	0.50	0.23	11.50		
			5	1.20	0.60	0.23	0.83		
							23.29	1768.08	41186.36
6	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kgl/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWD SR 2016-17)								
	Bad Reaches	Sqm							
			6	2.50	1.80	--	27.00		
			6	1.50	1.20	--	10.80		
			8	1.30	0.95	--	9.88		
			10	10.00	0.50	--	50.00		
			5	1.20	0.60	--	3.60		
							101.28	27.56	2791.28
7	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWD SR 2016-17)								
	Pampa Extension	Sqm							
	Pampa Extension main road		1	700.00	7.50	--	5250.00		
	5th c/s pampa extn		1	200.00	5.50	--	1100.00		
	3rd main pampa extn		1	45.00	3.80	--	171.00		
	2nd main pampa extn		1	40.00	4.50	--	180.00		
	1st Cross		1	40.00	4.30	--	172.00		
	2nd Cross		1	30.00	4.20	--	126.00		
	3rd Cross		1	28.00	4.20	--	117.60		
	Cross Road		1	25.00	4.20	--	105.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	4th Cross		1	115.00	5.50	--	632.50		
	6th Cross		1	45.00	5.50	--	247.50		
	7th Cross		1	50.00	5.50	--	275.00		
	11th Cross		1	75.00	5.20	--	390.00		
	Chinnappa Layout								
	2nd main pampa extn		1	200.00	6.00		1200.00		
	1st Cross		1	60.00	7.00		420.00		
	2nd Cross		1	60.00	6.50		390.00		
	Vinayaka layout								
	1st Cross		1	110.00	7.00		770.00		
	2nd Cross		1	100.00	7.00		700.00		
	3rd Cross		1	80.00	7.00		560.00		
							12806.60		
	Deduct prime coat						-101.28		
							12705.32	3.18	40402.92
8	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWD SR of 2016-17)								
	Pampa Extension	Sqm							
	For Laying BC								
	Pampa Extension main road		1.00	700.00	7.50	--	5250.00		
	5th c/s pampa extn		1	200.00	5.50	--	1100.00		
	3rd main pampa extn		1	45.00	3.80	--	171.00		
	2nd main pampa extn		1	40.00	4.50	--	180.00		
	1st Cross		1	40.00	4.30	--	172.00		
	2nd Cross		1	30.00	4.20	--	126.00		
	3rd Cross		1	28.00	4.20	--	117.60		
	Cross Road		1	25.00	4.20	--	105.00		
	4th Cross		1	115.00	5.50	--	632.50		
	6th Cross		1	45.00	5.50	--	247.50		
	7th Cross		1	50.00	5.50	--	275.00		
	11th Cross		1	75.00	5.20	--	390.00		
	Chinnappa Layout								
	2nd main pampa extn		1	200.00	6.00	--	1200.00		
	1st Cross		1	60.00	7.00	--	420.00		
	2nd Cross		1	60.00	6.50	--	390.00		
	Vinayaka layout								
	1st Cross		1	110.00	7.00	--	770.00		
	2nd Cross		1	100.00	7.00	--	700.00		
	3rd Cross		1	80.00	7.00	--	560.00		
							12806.60	12.72	162899.95
9	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWD S.R 2016-17)								
	Pampa Extension	Cum							
	Pampa Extension main road		1.00	700.00	7.50	0.04	210.00		
	5th c/s pampa extn		1	200.00	5.50	0.04	44.00		
	3rd main pampa extn		1	45.00	3.80	0.04	6.84		
	2nd main pampa extn		1	40.00	4.50	0.04	7.20		
	1st Cross		1	40.00	4.30	0.04	6.88		

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
	2nd Cross		1	30.00	4.20	0.04	5.04		
	3rd Cross		1	28.00	4.20	0.04	4.70		
	Cross Road		1	25.00	4.20	0.04	4.20		
	4th Cross		1	115.00	5.50	0.04	25.30		
	6th Cross		1	45.00	5.50	0.04	9.90		
	7th Cross		1	50.00	5.50	0.04	11.00		
	11th Cross		1	75.00	5.20	0.04	15.60		
	Chinnappa Layout								
	2nd main pampa extrn		1	200.00	6.00	0.04	48.00		
	1st Cross		1	60.00	7.00	0.04	16.80		
	2nd Cross		1	60.00	6.50	0.04	15.60		
	Vinayaka layout								
	1st Cross		1	110.00	7.00	0.04	30.80		
	2nd Cross		1	100.00	7.00	0.04	28.00		
	3rd Cross		1	80.00	7.00	0.04	22.40		
							512.26	8118.54	4158835.77
10	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWD SR 2016-17)								
	Edge line	Sqm	2	2003.00	0.10	--	400.60		
			0.5	1050.00	0.10	--	52.50		
							453.10	542.72	245906.43
	Total Construction Cost								5389751.514
11	Cost towards Preparation of DPR LS								53898.00
12	Cost towards PMC / Third Party inspection LS								53898.00
	Sub Total								5497547.51
13	Miscellaneous and rounding off								2452.49
	Total								5500000.00

Certificate.

- 1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
- 2 The provisions made in the estimate are necessary and essential.
- 3 The workspot was inspected and work is found to be necessary.
- 4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Tejus Consultant

 Assistant Engineer


 Assistant Executive Engineer


 Executive Engineer

ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
 ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ ಬೆಂಗಳೂರು-560092.

Technical Sanction
 Accorded For **55.00 lakhs**
 Head of A/C **P3158**
 CER NO : **"28"** Dt: **29/01/18**


 TA (YNK)

Sign in



11. IMPROVEMENTS TO ROADS AND DRAINS OF MANDI
MARIYAPPA ROAD VIA MARIYANNAPALYA TO DASARAHALLI
MAIN ROAD IN WARD NO.7,BYATARAYANAPURA.



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 11.Improvements to roads and drains OF Mandi MARIYAPPA Road via Mariyannapalya to Dasarahalli Main Road in Ward No.7,Byatarayanapura

								Est Cost: 40.0Lakh	
Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Ch 0-660		2	660.00	0.55	0.50	363.00		
	ch 660-1130		1	470.00	0.55	0.50	129.25		
							492.25	202.92	99887.37
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Drain	Sqm							
	Ch 0-1110		2	425.00	1.35		1147.50		
	Consider 25% for Damaged and Missing Slabs						-286.88		
							860.63	80.56	69331.95
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortar (1:6) including fixing curing etc.,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Consider 25% for Damaged and Missing Slabs						286.88		
							286.88	665.68	190966.95
4	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Ch 0-50		1.00	50.00	5.50	0.25	68.75		
	UGD Cutting		1	50.00	1.20	0.25	15.00		
	Bad Reaches		10	2.50	3.00	0.23	17.25		
			15	2.00	2.50	0.23	17.25		
			14	1.50	1.00	0.23	4.83		
							123.08	164.76	20278.66
5	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanial mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Ch 0-50		1.00	50.00	5.50	0.25	68.75		
	UGD Cutting		1.00	50.00	1.20	0.25	15.00		
	Bad Reaches		10.00	2.50	3.00	0.23	17.25		
			15.00	2.00	2.50	0.23	17.25		
			14.00	1.50	1.00	0.23	4.83		
							123.08	1768.08	217615.29

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
6	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Ch 0-50		1	50.00	5.50	--	275.00		
	UGD Cutting		1	50.00	1.20	--	60.00		
	Bad Reaches		10	2.50	3.00	--	75.00		
			15	2.00	2.50	--	75.00		
			14	1.50	1.00	--	21.00		
							506.00	27.56	13945.36
7	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Ch 50 -300		1	250.00	7.50	--	1875.00		
	Ch 300 -600		1	300.00	8.40	--	2520.00		
	Ch 600 -1000		1	400.00	6.60	--	2640.00		
	Ch 1000-1275		1	275.00	6.20	--	1705.00		
	Deduct prime coat						-231.00		
							8509.00	3.18	27058.62
8	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	Road Portion	Sqm							
	For Laying DBM								
	Ch 0-50		1.00	50.00	5.50	--	275.00		
	For Laying BC								
	Ch 0-50		1.00	50.00	5.50	--	275.00		
	Ch 50 -300		1.00	250.00	7.50	--	1875.00		
	Ch 300 -600		1.00	300.00	8.40	--	2520.00		
	Ch 600 -1000		1.00	400.00	6.60	--	2640.00		
	Ch 1000-1275		1.00	275.00	6.20	--	1705.00		
							9290.00	12.72	118168.80
9	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No.165 of I.No.21.17.6 in PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Ch 0-50		1.00	50.00	5.50	0.05	13.75		
							13.75	7120.02	97900.28
10	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
	Road Portion	Cum							
	Ch 0-50		1.00	50.00	5.50	0.04	11.00		
	Ch 50 -300		1.00	250.00	7.50	0.04	75.00		
	Ch 300 -600		1.00	300.00	8.40	0.04	100.80		
	Ch 600 -1000		1.00	400.00	6.60	0.04	105.60		
	Ch 1000-1275		1.00	275.00	6.20	0.04	68.20		
							360.60	8118.54	2927545.52
11	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&I WTD SR 2016-17)								
	Edge line	Sqm	2	1275.00	0.10	--	255.00		
							255.00	542.72	138393.60
							Total Construction Cost		3921092.400
12							Cost towards Preparation of DPR LS		39211.00
13							Cost towards PMC / Third Party inspection LS		39211.00
							Sub Total		3999514.40
14							Miscellaneous and rounding off		485.60
							Total		4000000.00

Certificate.

- 1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
- 2 The provisions made in the estimate are necessary and essential.
- 3 The workspot was inspected and work is found to be necessary.
- 4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Tejus Consultant

[Signature]
Assistant Engineer

[Signature]
Assistant Executive Engineer

[Signature]
Executive Engineer

ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಆಯುಧ ಸಂಪನ್ಮೂಲ ವಿಭಾಗ
ಆಯುಧ ಸಂಪನ್ಮೂಲ ವಿಭಾಗದ ಸಹಾಯಕ ಮುಖ್ಯಸ್ಥರ ಕಛೇರಿ-560092

Technical Sanction
Accorded For 40.00 Lakh
Head of A/C P3158
CER NO : 129 Dt: 29/01/18

[Signature]
TA

KEY MAP-11. Mandimariyappa Road



12. IMPROVEMENTS TO ROADS AND DRAINS FROM RENAISSANCE AERO APTS, SANTOSH VIHAR PHASE-1 AND PHASE-2 OF JAKKUR LAYOUT AND SURROUNDING AREAS IN WARD NO.7,BYATARAYANAPURA.



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: 12.Improvements to roads and drains from Renaissance Aero Apts, Santosh Vihar Phase-1 and Phase-2 of Jakkur Layout and Surrounding areas in Ward No.7,Byatarayanapura

								Est Cost: 100.0Lakh	
Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Tala cauvery Layout Mn Rd (80Ft Rd)		2	265.00	0.50	0.50	132.50		
	7th Cross Rd		2	375.00	0.50	0.50	187.50		
	1st Main Rd		2	230.00	0.50	0.45	103.50		
	3rd Cross Rd		2	45.00	0.50	0.45	20.25		
	2nd D Cross Rd		2	160.00	0.50	0.45	72.00		
	2nd C Cross Rd		1	20.00	0.50	0.45	4.50		
	2nd B Cross Rd		2	20.00	0.50	0.45	9.00		
	2nd A Cross Rd		2	105.00	0.50	0.50	52.50		
	2nd Cross Rd		2	120.00	0.60	0.50	72.00		
	1st A Mn Rd		2	110.00	0.60	0.50	66.00		
	Royal Garden Layout								
	Main Road		2	160.00	0.60	0.50	96.00		
	New Drain								
	3rd Cross Rd		2	110.00	0.70	0.70	107.80		
	4th Cross		2	120.00	0.70	0.70	117.60		
	Tala Cauvery Layout								
	Back side Rd Shiva Prakruthi Apartment		2	235.00	0.60	0.45	126.90		
	Nandini Milk Parlour to 3rd Main		2	200.00	0.60	0.45	108.00		
	Back side Shree Chandra mouleshwara temple		2	65.00	0.60	0.50	39.00		
	Opposite to Dlr Residency		2	100.00	0.60	0.50	60.00		
	Opp to Sk Home developers		2	140.00	0.60	0.50	84.00		
							1459.05	202.92	296070.43
2	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Drain	Sqm							
	Tala cauvery Layout Mn Rd (80Ft Rd)		2	265.00	1.80		954.00		
	7th Cross Rd		2	375.00	1.80		1350.00		
	1st Main Rd		2	230.00	1.80		828.00		
	3rd Cross Rd		2	45.00	1.80		162.00		
	2nd D Cross Rd		2	160.00	1.80		576.00		
	2nd C Cross Rd		1	20.00	1.80		36.00		
	2nd B Cross Rd		2	20.00	1.80		72.00		
	2nd A Cross Rd		2	105.00	1.80		378.00		
	2nd Cross Rd		2	120.00	1.80		432.00		
	1st A Mn Rd		2	110.00	1.80		396.00		
	Royal Garden Layout								
	Main Road		2	160.00	1.80		576.00		
	Back side Rd Shiva Prakruthi Apartment		2	235.00	1.80		846.00		
	Nandini Milk Parlour to 3rd Main		2	200.00	1.80		720.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Back side Shree Chandra mouleshwara temple		2	65.00	1.80		234.00		
	Opposite to Dlr Residency		2	100.00	1.80		360.00		
	Opp to Sk Home developers		2	140.00	1.80		504.00		
	Consider 30% for R&R						2527.20		
	Consider 20% for Damaged and Missing Slabs						-505.44		
							2021.76	80.56	162872.99
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortar (1:6) including fixing curing etc., Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Consider 20% for Damaged and Missing Slabs						505.44		
	Royal Garden Layout								
	3rd Cross Rd		2	110.00	1.80		396.00		
	4th Cross		2	120.00	1.80		432.00		
							1333.44	665.68	887644.34
4	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Bad Reaches		9	2.50	2.50	0.23	12.94		
			13	1.50	1.50	0.23	6.73		
			10	1.20	0.80	0.23	2.21		
			8	0.60	6.00	0.23	6.62		
	Royal Garden Layout								
	Main Road		1	160.00	6.50	0.23	239.20		
	3rd Cross Rd		1	110.00	5.50	0.23	139.15		
	4th Cross		1	120.00	5.50	0.23	151.80		
	Hodi Layout Main Road								
	1st Cross Road		1	27.00	4.50	0.25	30.38		
	2nd Cross Road		1	25.00	4.50	0.25	28.13		
	3rd Cross Road		1	25.00	5.20	0.25	32.50		
	4th Cross Road		1	25.00	3.50	0.25	21.88		
							671.52	164.76	110639.96
5	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanial mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Bad Reaches		9.00	2.50	2.50	0.23	12.94		
			13.00	1.50	1.50	0.23	6.73		
			10.00	1.20	0.80	0.23	2.21		
			8.00	0.60	6.00	0.23	6.62		
	Royal Garden Layout								
	Main Road		1.00	160.00	6.50	0.23	239.20		
	3rd Cross Rd		1.00	110.00	5.50	0.23	139.15		
	4th Cross		1.00	120.00	5.50	0.23	151.80		
							558.65	1768.08	987732.59

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
6	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kgsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWD SR 2016-17)								
	Road Portion	Sqm							
	Bad Reaches		9.00	2.50	2.50	--	56.25		
			13.00	1.50	1.50	--	29.25		
			10.00	1.20	0.80	--	9.60		
			8.00	0.60	6.00	--	28.80		
	Royal Garden Layout								
	Main Road		1.00	160.00	6.50	--	1040.00		
	3rd Cross Rd		1.00	110.00	5.50	--	605.00		
	4th Cross		1.00	120.00	5.50	--	660.00		
							2428.90	27.56	66940.48
7	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWD SR 2016-17)								
	Road Portion	Sqm							
	Tala cauvery Layout Mn Rd (80Ft Rd)		1.00	265.00	10.30	--	2729.50		
	7th Cross Rd		1.00	375.00	7.90	--	2962.50		
	1st Main Rd		1.00	230.00	7.80	--	1794.00		
	3rd Cross Rd		1.00	45.00	7.20	--	324.00		
	2nd D Cross Rd		1.00	160.00	6.30	--	1008.00		
	2nd C Cross Rd		1.00	20.00	4.00	--	80.00		
	2nd B Cross Rd		1.00	20.00	5.10	--	102.00		
	2nd A Cross Rd		1.00	105.00	5.10	--	535.50		
	2nd Cross Rd		1.00	120.00	6.30	--	756.00		
	1st A Mn Rd		1.00	110.00	6.00	--	660.00		
	Tala cauvery Layout								
	Back side Rd Shiva Prakruthi Apartment		1.00	235.00	5.60	--	1316.00		
	Nandini Milk Parlour to 3rd Main		1.00	200.00	5.70	--	1140.00		
	Back side Shree Chandra mouleshwara temple		1.00	65.00	5.30	--	344.50		
	Opposite to Dlr Residency		1.00	100.00	5.50	--	550.00		
	Opp to Sk Home developers		1.00	140.00	5.60	--	784.00		
	Deduct prime coat						-123.90		
							14962.10	3.18	47579.48
8	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWD SR of 2016-17)								
	Road Portion	Sqm							
	For Laying DBM								
	Royal Garden Layout								
	Main Road		1.00	160.00	6.50	--	1040.00		
	For Laying BC								
	Tala cauvery Layout Mn Rd (80Ft Rd)		1.00	265.00	10.30	--	2729.50		
	7th Cross Rd		1.00	375.00	7.90	--	2962.50		
	1st Main Rd		1.00	230.00	7.80	--	1794.00		
	3rd Cross Rd		1.00	45.00	7.20	--	324.00		
	2nd D Cross Rd		1.00	160.00	6.30	--	1008.00		
	2nd C Cross Rd		1.00	20.00	4.00	--	80.00		
	2nd B Cross Rd		1.00	20.00	5.10	--	102.00		
	2nd A Cross Rd		1.00	105.00	5.10	--	535.50		
	2nd Cross Rd		1.00	120.00	6.30	--	756.00		

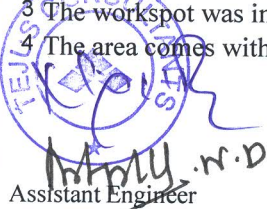
Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	1st A Mn Rd		1.00	110.00	6.00	--	660.00		
	Royal Garden Layout								
	Main Road		1.00	160.00	6.50	--	1040.00		
	3rd Cross Rd		1.00	110.00	5.50	--	605.00		
	4th Cross		1.00	120.00	5.50	--	660.00		
	Tala cauvery Layout								
	Back side Rd Shiva Prakruthi Apartment		1.00	235.00	5.60	--	1316.00		
	Nandini Milk Parlour to 3rd Main		1.00	200.00	5.70	--	1140.00		
	Back side Shree Chandra mouleshwara temple		1.00	65.00	5.30	--	344.50		
	Opposite to Dlr Residency		1.00	100.00	5.50	--	550.00		
	Opp to Sk Home developers		1.00	140.00	5.60	--	784.00		
							18431.00	12.72	234442.32
9	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No.165 of I.No.21.17.6 in PW,P&IWD S.R 2016-17)								
	Royal Garden Layout	Cum							
	Main Road		1.00	160.00	6.50	0.05	52.00		
							52.00	7120.02	370241.04
10	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWD S.R 2016-17)								
	Road Portion	Cum							
	Tala cauvery Layout Mn Rd (80Ft Rd)		1.00	265.00	10.30	0.04	109.18		
	7th Cross Rd		1.00	375.00	7.90	0.04	118.50		
	1st Main Rd		1.00	230.00	7.80	0.04	71.76		
	3rd Cross Rd		1.00	45.00	7.20	0.04	12.96		
	2nd D Cross Rd		1.00	160.00	6.30	0.04	40.32		
	2nd C Cross Rd		1.00	20.00	4.00	0.04	3.20		
	2nd B Cross Rd		1.00	20.00	5.10	0.04	4.08		
	2nd A Cross Rd		1.00	105.00	5.10	0.04	21.42		
	2nd Cross Rd		1.00	120.00	6.30	0.04	30.24		
	1st A Mn Rd		1.00	110.00	6.00	0.04	26.40		
	Royal Garden Layout								
	Main Road		1.00	160.00	6.50	0.04	41.60		
	3rd Cross Rd		1.00	110.00	5.50	0.04	24.20		
	4th Cross		1.00	120.00	5.50	0.04	26.40		
	Tala cauvery Layout								
	Back side Rd Shiva Prakruthi Apartment		1.00	235.00	5.60	0.04	52.64		
	Nandini Milk Parlour to 3rd Main		1.00	200.00	5.70	0.04	45.60		
	Back side Shree Chandra mouleshwara temple		1.00	65.00	5.30	0.04	13.78		
	Opposite to Dlr Residency		1.00	100.00	5.50	0.04	22.00		
	Opp to Sk Home developers		1.00	140.00	5.60	0.04	31.36		
							695.64	8118.54	5647581.17

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
11	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	2580.00	0.10	--	516.00		
	Center Line		0.5	915.00	0.10	--	45.75		
							561.75	542.72	304872.96
12	KSRRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Hodi Layout Main Road								
	1st Cross Road		1.00	27.00	4.50	0.15	18.23		
	2nd Cross Road		1.00	25.00	4.50	0.15	16.88		
	3rd Cross Road		1.00	25.00	5.20	0.15	19.50		
	4th Cross Road		1.00	25.00	3.50	0.15	13.13		
							67.73	5348.76	362244.77
13	Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggretes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) ((P.No.177, I.No.22.6.1 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Hodi Layout Main Road								
	1st Cross Road		1.00	27.00	4.50	0.10	12.15		
	2nd Cross Road		1.00	25.00	4.50	0.10	11.25		
	3rd Cross Road		1.00	25.00	5.20	0.10	13.00		
	4th Cross Road		1.00	25.00	3.50	0.10	8.75		
							45.15	6217.96	280740.89
14	Vaccum de-watering with vacuum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.(P.No.177, I.No.22.7 of PW, P&IWTD SR 2016-17)								
	Hodi Layout Main Road	Sqm							
	1st Cross Road		1.00	27.00	4.50	--	121.50		
	2nd Cross Road		1.00	25.00	4.50	--	112.50		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	3rd Cross Road		1.00	25.00	5.20	--	130.00		
	4th Cross Road		1.00	25.00	3.50	--	87.50		
							451.50	95.40	43073.10
							Total Construction Cost		9802676.519
15							Cost towards Preparation of DPR LS		98027.00
16							Cost towards PMC / Third Party inspection LS		98027.00
							Sub Total		9998730.52
17							Miscellaneous and rounding off		1269.48
							Total		10000000.00

Certificate.

- 1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
- 2 The provisions made in the estimate are necessary and essential.
- 3 The workspot was inspected and work is found to be necessary.
- 4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.


Assistant Engineer


Assistant Executive Engineer

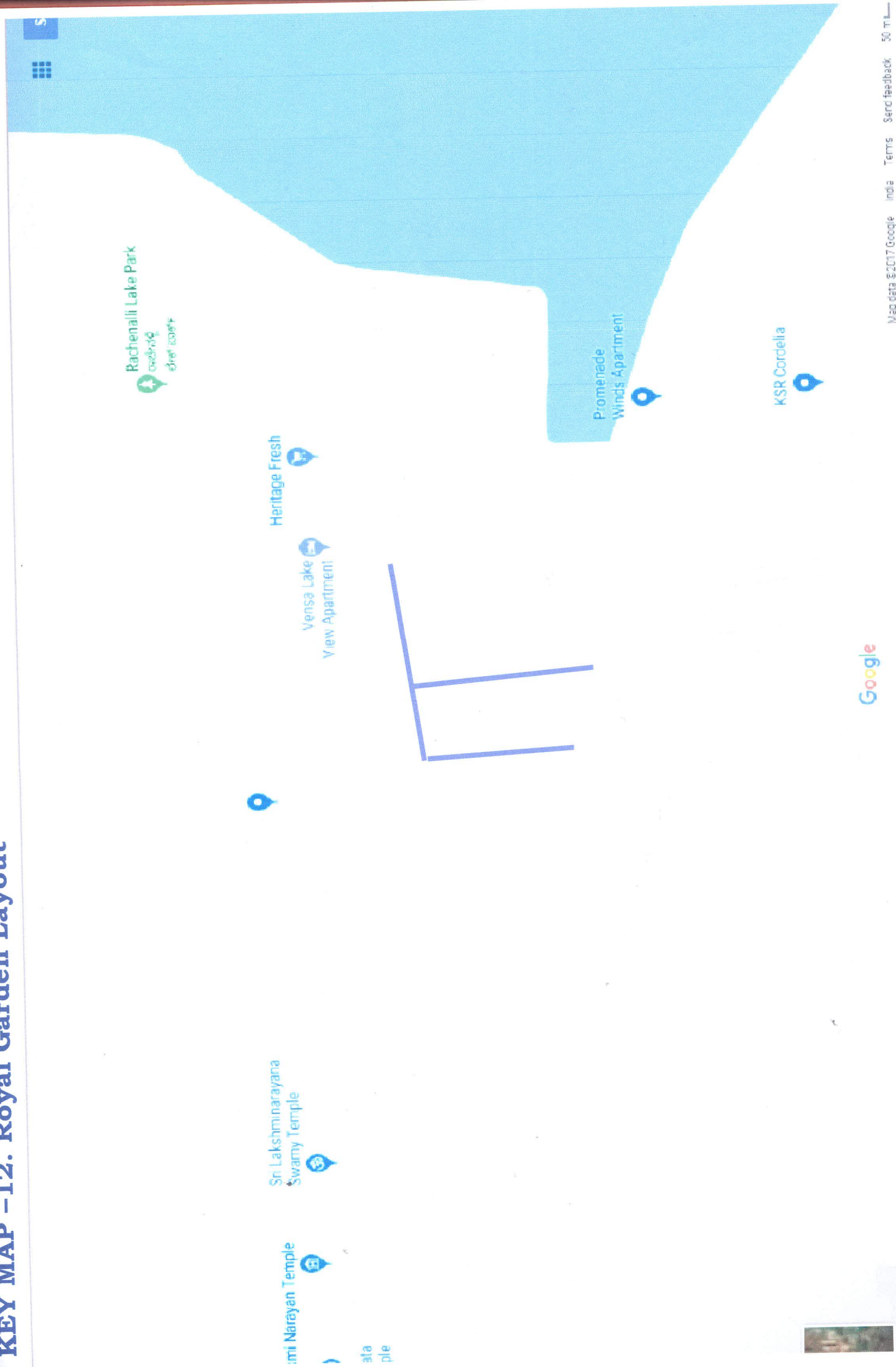

Executive Engineer

ಬ್ರಹ್ಮಬಾಂಗಲೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಇಂಜಿನಿಯರಿಂಗ್ ವಿಭಾಗ, ಬೆಂಗಳೂರು-560092.

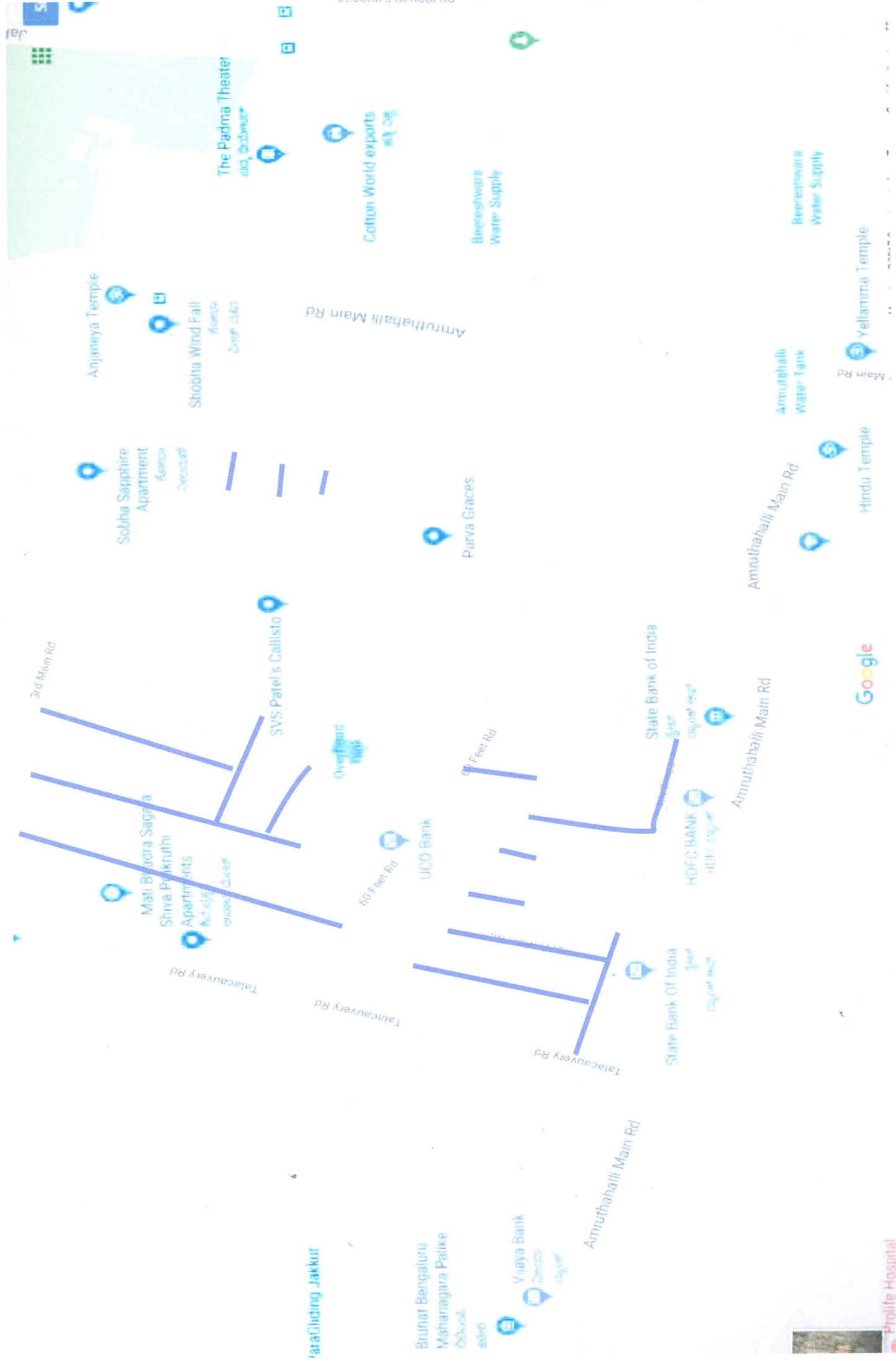
Technical Sanction
Accorded For ... 100.00/6th
Head of A/C ... P8158
CER NO : "30" Dt. 29/01/18


TA / CE (NINQ)

KEY MAP -12. Royal Garden Layout



KEY MAP -12. Talakaveri Layout



13. CONSTRUCTION OF 2 RO PLANT IN WARD NO. 07,
BYATARAYANAPURA.



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Construction of Two RO plant in ward no. 07 Byatarayanapura

							Est Cost: =30.0Lakh		
Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	Geophysical investigation of site for sinking Borewell for supplying drinking water to the habitation either through the Hand pump, MWS of P.W.S.S by vertical electrical sounding by adopting Venner or Schlumberger's method, including reconnaissance survey of geological formation, Gerophysical investigation of existing Ground Wate in the vicinity, its qualityf 1.0 meter in consolidated formation for proper seating of casing pipe, depth of drilling required to cover full depth of aquifer proposed to be tapped, probable yield and other information required including transportation of instrument and accessories to work site., engaging technical personal and labour required etc., as per Specification and direction (P.48, I. 9.4) PRED.SR 2012-13	Each BW							
			2				2	1882.00	3764.0
2	Sinking borewell of 165 mm dia clear using super fast hydraulic rig of capacity 250 PSIG & above CFM & above in all strats including over burden upto 20 mts fixing of casing pipes, collars and cap with necessary cutting, throading and welding including transportation of rig and supporing vehicles, crew charges and cost of consumables etc., complete including yield testing at the final depth with a minimum working of compressor for one hour (excluding coat of casing pipes, collars, cap etc.,) P. 46 / I. 9.1 PRED SR 2012-13	Rmtr							
	0 to 50 m		2	50.00			100.00	306.00	30600.0
	50 to 100 m		2	50.00			100.00	400.00	40000.0
	100 to 150 m		2	50.00			100.00	445.00	44500.0
	150 to 200 m		2	50.00			100.00	470.00	47000.0
	200 to 250 m		2	50.00			100.00	544.00	54400.0
3	Supply of ISI mark 175 mm nominal bore, Plain end steel casing pipe - grade of Steel Fee 410 of wall thickness 5.4mm thick confirming to IS 4270:2001 and latest amendments, electric resistance welded steel tube material and confirming to IS 1387/1993 and manufactured by baseic open hearth electric or basic oxygen process in random length of 5 to 7 mts both ends threaded confirming tio IS 554/1985, one end fixied with socket confirming to IS 4270:2001 and the other end with screwed pipes ISI Marking weighing 25.10Kg/mtr (Inclusive of all taxes and durties) Prices include Collar-medium duty P. iii, I No. 84 PRED SR 2012-13	Rmtr							
			2	50.00			100.00	1325.00	132500.0
4	Providing 250mm dia PVC Pipe 6kg/cm SE PRED Approved Rate	Rmtr							
			2	18.00			36.00	754.47	27161.0
5	Providing and fixing 160mm Borewell Cap P. iii, I No. 85	Each							
			2				2	100.00	200.0

6	Supply and delivery at site brand New texmo/ innoval/ Lubi/ Sabar / Atalanta/ Calamal/ make suitable for vertical installation in 150mm dia bore well comprising of single stage or multistage CF pump close coupled by means of stainless steel coupling to suitable HP suitable speed totally enclosed and filled with pure drinking water (Wet type) squirrel cage submersible induction motor suitable for operation of 3PH., 50 Hz, 380/440 volts AC supply fitted with required accessories such as suction, casing suction strainers sand guard Non return valve etc. complete . The pump and motor shall form an integral unit with all the required fittings 12.50 HP 25 stage. ATALANTA< SUGNA< CRI, KIRLOSKAR and other Equivalent Pumps PWD SR 2016-17 P. XXXXII Item No. 24 including of all taxes	No							
	12.5 HP 25 Stage		2				2	60400	120800.0
7	Supplying of ISI marked galvanized mild steel tube (continuously welded electric resistance welded (ERW) high frequency, induction welded (HFIW) Hot finished welded type of nominal bore given below screwed at both ends as per IS 554/1986 with latest amendments, pipes threaffes at one end and the other end protected asper specification in random lengths of 4 to 7 mtrs Confirming to IS 1239 part I/1990 with amendment 1-5 and with all its latest amendements if any. The pipes supplied should be with BIS mark No 3/08-09 2406/15.10.2008	Rmtr							
			2	250.00			500.00	375.00	187500.0
8	Heavy Duty Collar 50 mm dia	Nos	88				88	130.00	11440.0
9	Supplying and drawing 3 core flat PVC sheathed submersible pump cable manufactured with electrolytic grade copper with flexible copper with low resistance conductor confirming to table 3 class 5 of IS:8130-1984 and virgin grade PVC insulation and powder coating extruded PVC sheathed suitable for working voltage upto 1100Volts as per IS-694:1990 & confirming to GTP of GROUP-A. P. No. 12 / I No. 2.10.4(1) 3C x 6 Sqm mm KPWD Electrical SR 2014-15	Mtr							
			4	255.00			1020.00	188.70	192474.0
10	Erection of pumpset including aligning and balancing with all necessary erection materials and labour including supply and erection of one pair supporting clamps, one borewell cap. Cable clips with bolts, nuts, valves guages etc., involved in the job (Necessary GI pipe and specials with be supplied by the board at the site free of cost) (As per rate approved KUWS & DB for year 2008-09	No							
			2				2	3000.00	6000.0
11	Supplying and fixing 20"x20"x2.5" polished wood board made of not less than 15mm thick plank on both sides with planks made out of not more than 2 pieces and fixing the same to the wall using tapered inverted wooden plugs screws etc., P No. 44 / I No. 6.6.6 KPWD Electrical SR 2014-15	Each							
			2				2	302.00	604.0

12	Supplying of 1.1 KV LT UG cable having aluminum conductor PVC insulated, extruded inner sheathed, galvanized, steel strip (except 2CX10Sq.mm wire armoured) confirming to IS-3975:1990 (No. of Strip indicated in GTP) & extruded PVC outer sheathed armoured cable with specified IS-1554 Part-1:1988 & confirming to GTP of GROUP-A P No. 55/ I No. 7.4.4 4 core 16 Sqmm KPWD Electrical SR 2014-15	Mtr							
			2	30.00			60.00	140.40	8424.0
13	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required. In existing trench/duct. P No. 61 / I No. 7.8.1 6Sqmm to 16 Sqmm) KPWD Electrical SR 2014-15	Mtr							
			2	30.00			60.00	10.80	648.0
14	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc., complete. (As per Civil SR KSRB I-2, P-7) P No. 61 / I. No. 7.9.3 KPWD Electrical SR 2014-15	Mtr							
	For Cutting Road Surface		2	25.00			50.00	85.00	4250.0
15	Supplying and fixing of class A (medium duty) GI pipe of wall thickness not less than 3.25mm on pole/wall/drain crossing with necessary clamping arrangements for UG cable of 1.1 KV P. No. 62 / I No. 7.12.1 KPWD Electrical SR 2014-15	Mtr							
	40mm dia GI pipe		2	4.00			8.00	345.00	2760.0
16	Supplying and fixing L.T. cast Iron pot heads suitable for 1.1 KV class UG cable filled with necessary bitumen/insulating compound complete with terminals, clamps, bolts, nuts and washers etc., P. No. 62 / I.No. 7.13.2 KPWD Electrical SR 2014-15	No.							
	16Sqmm		2				2.00	280.00	560.0
17	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm dia, (P No. 55, I No. 7.1) KPWD Electrical SR 2014-15	No							
			2				2	2727.00	5454.0
18	Supplying & fixing of Porcelain fuse channel with cut out on existing wooden/panel using necessary nuts, bolts and washers. P No. 44 / I No. 6.7.2 KPWD Electrical SR 2014-15	No.							
	32 Amps		12				12	180.00	2160.0
19	KSRB 13-7.1-4: Providing and fixing in position 50mm nominal bore gun metal non-return valve horizontal type of approved make including cost of all materials, labour and HOM of equipments with all leads complete as per specifications NO KBS 13.2.16 / 13.13 Page No. 93 Item No. 13.55 / PWD SR 2016-17	Nos							
			2				2	1615.68	3231.0
	Basic Rate		1496.00						
	Area Weightage @ 8%		119.68						
	Total		1615.68						

20	Providing NP/CP waste unions conforming to ISI specifications and fixing them in position as per directions including cost of materials, fixtures and conveyance to work spot etc., complete. P. No. 95 / I. No. 13.81.3 PWD SR 2016-7	No						
	50mm dia		2				2	232.20
	Basic Rate	215.00						
	Area Weightage @ 8%	17.20						
	Total	232.20						
21	Supplying and fixing 50mm dia GI X nipple with ISI mark with all lead and lift loading unloading and labour charges etc complete	No						
			2	4.00			8	80.00
								640.0
22	Supplying shunt capacitors conforming to IS 2834, 3phase 400/440 volts grade for power factor improvement of rotating machinery, Capacitor in KVAR rating Nos. 2KVAR capacity with all lead and lift =, loading, unloading and labour charges etc complete as per specifications	No						
			2				2	350.00
								700.0
23	Supplying and fixing miniature circuit breakers on existing MCB distribution boards using necessary fixing materials and 'C' Type curve, indicator ON/OFF, energy cross-3 with Short circuit breaking capacity of 10K and complete wiring as required conforming to IEC 60898. 5-32Amps TPN P No. 47 / I No.6.16.5 KPWD SR 2014-15	No						
			2				2	1547.00
								3094.0
24	Fabricating supplying and mounting MS box made out ... SWG suitable for floor / wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged front cover, equipped with tamper proof locking arrangements, with suitable size clamps with necessary cable entry pipe with gland and box should be finished with 2 coats of red oxide primer paint and finally finished with approved colour enameled metal paint etc., complete P.No. 49, I. No. 6.40.2 KPWD Electrical SR 2014-15	Sq.Cm						
	16SWG		4	120.00	60.00		28800	
			2	300.00	25.00		15000	
							43800	0.33
								14454.0
25	Supplying and delivery at site brand new star / Essen/ Lotus/Sun-shines/Adarsh/ GK Controls best indigenous make combined energy meter - cum- control panel board unit of size 600x450 x200 mm minimum mechanically strong vermin and water proof. The unit shall have two detachable doors suitable for operation on 3 ph, 50Hz, 380/440 volts, A.C supply with spring loaded latch, locking device with a key ribs should be provided inside the door, canopy apron and louvers ventilators shall be provided. the combined energy meter cum- control panel board unit suitable for operation. The panel board shall be fabricated on single unit in the above components for suitable pumpset. 12.5HP to 15 HP Star Delta Starter SERDED Rate	No.						
			2				2	11000
								22000.0
26	Earthwork excavation for pipeline trenches including deporiting or bank up to a lead of 50 mtrs including shiriry and statting danger lighting and using site rails and boming poles at every 100 mtrs wherever necessary as directed in th following strstructure manhole. Page No. 01/ Item No.1.2.2 / PRED SR 2012-13 Hard Soil	Cum						
			2	60.00	0.60	0.75	54.00	

							54.00	188.00	10152.0
	Basic Rate	188.00							
27	Providing and instalation at site of works P.V.C.Pipes including cost of pipes and specials and including lowering into trenches, laying true to line, level and perfect linking at joints, leak proof including jointing encasing the pipe alround to a depth Not less than 15cm with grave or selected earth avalabile from the excavation Etc., Page No.15 item No.3.4.2 b PRED SR 2012-13.	Rmtr							
	75 mm dia 6 KSC PVC pipe		2	60.00			120.00		
							120.00	157.00	18840.0
28	Refilling the basement and pipeline treanches with seclated available earthe for trench excavation including authority condition in layers from thedi including dispensary of the sunplus earth with a heavy 200 mtrs Page No. 3 / Item No. 1.6 / PRED SR 2012-13	Cum							
			Qty. Vide Item No. 27				54.00	61.00	3294.0
	Basic Rate	61.00							
29	KSRB 13.6.3-6 : Providing and fixing in position brass gate valve with C.I wheel of approved quality (screwed end) 50mm nominal bore including cost of all materials, labour and HOM of equipments with all leads complete as per specifications. Specification No. KBS 13.2.6/13.3 P. 92 / I.13.37 PWD SR - 2016-17	Each							
			4				4	2216.16	8865.0
	Basic Rate	2052.00							
	Area Weightage @ 8%	164.16							
	Total	2216.16							
ROOM FOR RO PLANT									
30	KSRB 2-2.2 : Earth work excavation for foundation of buildings, culverts water supply, sanitary line and electrical conduits either in pits or in trenches 1.5m and above in width, in Hard soil not exceeding 1.5m, in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m, after breaking of clods complete as per specifications, specification, No. KBS 2.1(a) / 2.3.5, Page No. 5 / Item No. 2.3/ PWD SR 2016-17	Cum							
	Centre Line	2	1	18.40	0.90	0.80	26.49		
	Columns	2	4	1.50	1.50	1.20	21.60		
							48.09		
							48.09	204.12	9816.0
	Basic Rate	189.00							
	Area Weightage @ 8%	15.12							
	Total	204.12							
31	KSRB 4-1.3 : Providing and laying in position plain cement concrete of mix 1:4:8 with OPC cement @ 180 kgs with 40mm and down size graded granite metal coarse aggregates @ 0.85cum and fine agggregares @ 0.57 cum machine mixed, concrete laid in layers not, exceeding 15cms, thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1.4.2. No. 12/ Item No. 4.3/ PWD SR 2016-17	Cum							
	Wall Portion	2	1	18.40	0.90	0.15	4.96		
		2	4	1.50	1.50	0.15	2.70		
	For Flooring	2	1	4.70	4.10	0.15	5.78		

							13.44		
							13.44	5256.36	70645.0
	Basic Rate	4867.00							
	Area Weightage @ 8%	389.36							
	Total	5256.36							
32	KSRB 5.2.3 : Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5.1.13 Page No. 23 / Item No. 5.6 / PWD SR 2016-17								
	Cum								
	Wall Portion	2	1	18.40	0.75	0.60	16.56		
	Deduction for Columns	2	4	1.50	0.75	0.60	-5.40		
							11.16		
							11.16	4521.96	50465.0
	Basic Rate	4187.00							
	Area Weightage @ 8%	334.96							
	Total	4521.96							
33	KSRB 5.3.3 : Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5-1.13 Page No. 23 / Item No. 5.9 / PWD SR 2015-16								
	Cum								
	Wall Portion	2	1	18.40	0.45	0.45	7.45		
	Deduction for Columns	-2	4	1.50	0.45	0.45	-2.43		
							5.02		
							5.02	5405.40	27135.0
	Basic Rate	5005.00							
	Area Weightage @ 8%	400.40							
	Total	5405.40							
34	KSRB 2.3 : Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. Specification No. KBS 2.9 (P.6/I.2.10) PWD SR 2016-17								
	Cum								
				Qty Vide Item No. 30			48.09	137.16	6596.0
	Basic Rate	127.00							
	Area Weightage @ 8%	10.16							
	Total	137.16							
35	KSRB 5-11 : Providing and constructing load bearing wall with solid concrete blocks of size 400x200x200 mm having block density not less than 1800 kg/m3 and having a minimum average compressive strength 5.00 N/mm2 confirming to IS 2185 (Part) : 2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials, labour charegs, scaffolding, curing complete as per specifications. KBS No.5.4. Page No. 25 / Item No. 5.27 / PWD SR 2016-17								
	Sqm								
	Wall Portion	2	2	5.10		3.00	61.20		
		2	2	4.10		3.00	49.20		
	Parapet Wall	2	2	5.10		0.40	8.16		
		2	2	4.10		0.40	6.56		
	Steps	2	4	4.10		0.10	3.28		
							128.40		
	Deductions RS	2	1	3.04		2.50	15.20		
	V	2	2	0.90		0.60	2.16		
							-17.36		
							111.04		
							111.04	1011.96	112368.0
	Basic Rate	937.00							

	Area Weightage @ 8%	74.96							
	Total	1011.96							
36	KSRB 4.2.2 : Providing and laying in position reinforced cement concrete of design mix M20 with OPC cement @ 320 kgs, with 20mm and down size graded granite metal, coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum with superplasticiser @ 3lts confirming to IS 9103-1999 reaffirmed-2008 machine mixed, concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation plinth and ground floor level for roof slabs, staircase, lintels, retaining walls, walls (any thickness) including attached plasters, column, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc, including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. Specification No. KBS 4.1,4.6, No. 13/ Item No. 4.11/ PWD SR 2016-17	Cum							
	Column Footing	2	4	1.20	1.20	0.50	5.76		
		2	4	0.23	0.23	3.80	1.60		
	Plinth Beam	2	1	18.40	0.20	0.20	1.47		
	Lintels	2	1	18.40	0.20	0.15	1.10		
	Roof Slab	2	1	5.55	4.50	0.125	6.24		
							16.17		
							16.17	6491.88	104974.0
	Basic Rate	6011.00							
	Area Weightage @ 8%	480.88							
	Total	6491.88							
37	KSRB 4.2.10 : Providing and laying in position reinforced cement concrete of mix M20 with OPC cement @ 24kgs, with 12 mm and down size graded granite metal coarse aggregates @ 0.5175 cum and fine aggregates @ 0.345 cum with superplasticiser @ 0.225lts, machine mixed, well compacted for plain chajja of 7.5 cms. average thickness, upto ground floor level, including cost of all materials, labour, HOM of machinery, curing, complete as per specification. Specification NO. KBS 4.1, 4.6 Page No. 14 / Item No. 4.19 / PWD SR 2016-17	Sqm							
	W	2	1	4.50	0.45		4.05		
							4.05		
							4.05	492.48	1995.0
	Basic Rate	456.00							
	Area Weightage @ 8%	36.48							
	Total	492.48							
38	KSRB 4.9.1: Providing TMT steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3 Page No. 17 / Item No. 4.46.2 / PWD SR 2016-17 - FE 500	Ton							
	For Roof, Columns Beams @ 120 Kg / Cum	1	120.00	16.17			1940.40		
	Chajjas @ 7.5 Kg / sqm	1	7.500	4.05			30.37		
							1970.77		
							1.970	75081.60	147911.0
	Basic Rate	69520.00							
	Area Weightage @ 8%	5561.60							
	Total	75081.60							

39	KSRB 4-6.4 : Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. Specification NO KBS 4.6.2 Page No. 15 / Item No. 4.31/ PWD SR 2016-17	Sqm							
	Columns Footing	2	4	4.80		0.50	19.20		
		2	4	0.92		4.00	29.44		
	Plinth	2	1	18.40		0.20	7.36		
	Lintels	2	1	18.40		0.15	5.52		
	Roof	2	1	5.55	4.50		49.95		
	Sides	2	2	5.55		0.15	3.33		
		2	2	4.50		0.15	2.70		
							117.50		
							117.50	316.44	37182.0
	Basic Rate	293.00							
	Area Weightage @ 8%	23.44							
	Total	316							
40	KSRB 4-6.10 : Providing and removing centering, shuttering, strutting, propping etc., for chajjas, corbels etc., including edges including cost of all materials, labour complete as per specifications. Specification NO KBS 4.6.2 Page No. 16 / Item No. 4.37 / PWD SR 2016-17	Sqm							
		2	1	4.50	0.60		5.40		
							5.40		
							5.40	291.60	1575.0
	Basic Rate	270							
	Area Weightage @ 8%	22							
	Total	292							
41	KSRB 15.3.13 : Providing 12mm thick cement plaster in single coat with cement mortar 1:3, to ceiling including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. Page No. 114 / Item No. 15.21 / PWD SR -2016-17	Sqm							
		2	1	4.70	4.10		38.54		
							38.54	208.44	8033.0
	Basic Rate	193							
	Area Weightage @ 8%	15							
	Total	208							
42	KSRB 15.3.11 :Providing 20mm thick cement plaster in single coat with cement mortar 1:4, to stone masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. Page No. 114 / Item No. 15.19 / PWD SR 2016-17 (Inside wall)	Sqm							
	Inside wall	2	2	4.70		3.00	56.40		
		2	2	4.10		3.00	49.20		
							105.60		
	Deductions - For rolling shutter ventilators	2	1	3.04		2.50	15.20		
		2	2	0.90		0.60	2.16		
							-17.36		
							88.24		
							88.24	252.72	22300.0
	Basic Rate	234							
	Area Weightage @ 8%	19							
	Total	253							
43	KSRB 15-7 : Providing lime rendering for plastering to wall and ceiling, including cost of materials, labour, curing complete as per specifications. (P. 115 / I. 15.33 PWD SR - 2016-17).	Sqm							

			Qty Vide Item No. 14+15				126.78	27.00	3423.0
	Basic Rate	25							
	Area Weightage @ 8%	2							
	Total	27							
44	KSRB 15.3.9: Providing 18mm thick cement plaster in single coat with cement mortar 1:6, to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications Page No. 114 / Item No. 15.17 / PWD SR 2016-17 (Out side Wall)								
		Sqm							
	Out Side	2	2	5.10		3.45	70.38		
		2	2	4.50		3.45	62.10		
							132.48		
	deduction for RS	2	1	3.04		2.50	15.20		
	V	2	2	0.90		0.60	2.16		
							-17.36		
							115.12		
							115.12	213.84	24617.0
	Basic Rate	198							
	Area Weightage @ 8%	16							
	Total	214							
45	KSRB 15-14.1 : Providing and applying two coats with oil bound washable distemper of approved brand and shade on wall surface including priming coat with distemper primer after thoroughly brooming the surface free from mortar drops and other foregin matter including preparing the surface even and sand paper smooth, cost of materials, labours, complete as per specifications PWD SR 2016-17 (P.117 /I. 15.49.1)								
		Sqm							
			Qty Vide Item No.13+14				215.02		
							215.02	76.68	16488.0
	Basic Rate	71							
	Area Weightage @ 8%	6							
	Total	77							
46	KSRB 15-16.1: providing and finishing external walls in tow coats with water proof cement paint of approve brand and shade to give an even shade after thoroughy brooming the surface to remove all dirt and losse powdered material, free from mortar dops and other foreign matter cost of materials, labours, complete as per specifications PWD SR 2016-17 (P. 118 /I. 15.53.2) with Primer								
		Cum							
			Qty Vide Item No.16				115.12		
							115.12	90.72	10444.0
	Basic Rate	84							
	Area Weightage @ 8%	7							
	Total	91							
47	KSRB 15-18.2 : Providing and applying enamel metal paint two coats (excluding priming coat) over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. Page No. 121 / Item No. 15.74 / PWD SR 2016-17								
		Sqm							
	Out Side	2	2	6.04		2.50	67.95		
		2	2	0.90		0.60	2.16		
							70.11		
							70.11	88.56	6209.0
	Basic Rate	82.00							
	Area Weightage @ 8%	6.56							
	Total	88.56							

48	Providing and fixing Special make glazed Vitrified tiles (Granomite finis) of approved make, quality and colour of sized 600x600x10mm thick fixed on existing flooring with a special roffe adhesive for flooring and skirting etc., complete including providing spears at required interval and removing stains etc., complete. Page No. 107 / Item No. 14.43 / PWD SR 2016-17	Sqm							
		2	1	4.70	4.10		38.54		
		2	2	4.70		1.50	28.20		
		2	2	4.10		1.50	24.60		
							91.34		
	Deduction RS	2	1	3.05		1.50	-9.15		
							82.19		
							82.19	1285.20	105631.0
	Basic Rate	1190.00							
	Area Weightage @ 8%	95.20							
	Total	1285.20							
49	Providing and laying/fixing cement base, precast pre polished cement concrete, designer tiles 25mm thick conforming to IS 1237 heavy duty tiles for flooring reads of steps of steps and landin, laid on a bed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement, including cost of material,s including cutting, griding the edge ti half/ful rounf wherever requires labour, curing complete as per specification Page No. 109 / Item No. 14.62 / PWD SR 2016-17	Sqm							
		2	4	2.50		0.45	9.00		
							9.00		
							9.00	1171.80	10546.0
	Basic Rate	1085.00							
	Area Weightage @ 8%	86.80							
	Total	1171.80							
50	KSRB 7.7 : Providing and fixing in position in cement concrete 1:3:6 steel glazed windows and ventilators side hung/top hung fully openable as per approved drawings using Z angles of 25x33x3mm, weighing 1.419Kg/m both for outer and inner frames and central mullion section of size 25x46x3mm weighing 2.28Kg/m duly providing T section 19x19x3mm weighing 0.839 kg/m for glazing of windows not more than 34 cms. c to c including providing and fixing 4mm thick reeded glass with teakwood beading of required size, all steel section should confirm to I.S. 7452:1990, 4nos, of holdfasts of approved size section should be cut to length welded and electrically grinded subdividing frames of unit shall be tenonned and revetted into the frames electrically. All the steel surface shall be thoroughly cleaned free of rust and painted with one coat of anti-corosive paint and finishing with two coats of ready mix paint of approved colour and make including cost of materials, fixtures, labour and HOM of machinery complete as per spere to control , handle , process the data and communicate it wirelessly.6) Metal Enclosure : IP66 weather p	Sqm							
		2	2	0.90		0.60	2.16		
							2.16		
							2.16	3812.40	8235.0
	Basic Rate	3530.00							
	Area Weightage @ 8%	282.40							
	Total	3812.40							

51	KSRB: 7.5 Providing and fixing pull and push type rolling shutters of approved make out of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements for steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & outside locking with push & operations complete Including pulling hooks, 4nos handles wit hall fittings and accessories, painted with a coat of red lead paint (without top cover) cost of materials, labour, HOM of machinery complete as per specifications. Shutter size 3mx2.8m Specification NO. KBS 7.10 / 7.12 Page No. 31 / Item No. 7.5/ PWD SR 2015-16								
		Sqm							
		2	1	3.00		2.50	15.00		
							15.00		
							15.00	3090.96	46364.0
	Basic Rate	2862.00							
	Area Weightage @ 8%	228.96							
	Total	3090.96							
52	Providing R.O. Plant								
	Providing revrsrse osmosis system to cover 2000 Liters of High TDS water per hour								
	TECHNICAL SPECIFICATIONS								
	Flow Rate:								
	Feed Water : 5000 LPH								
	Treated Water : 3000 LPH								
	Reject Water : 2000 LPH								
A	RAW WATER PUMP								
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for filter?								
B	SAND MEDIA FILTER								
	Purpose:- To remove the total suspended solids, dirt, iron and reduce silt density index which can foul the members								
C	ACTIVATE CARBON FILTER								
	Purpose:- To remove the total color, smell, odor from the water.								
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & Accessories : Pipe of PVC 10 Bar tested pressure testing cock & pressure gauges at inlet - outlet of system								
	DOSING SYSTEM								
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes								
D	MICRON FILTER								
	Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.								
E	HIGH PRESSURE PUMP								
	Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery								
	RO membrane housing.								
	Purpose : To pack membrane and operate at high pressure.								
	RO MEMBRANES								
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.								

	RO CLEANSING SYSTEM							
F	ELECTRICAL PANEL							
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.							
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.							
	INSTRUMENTATION							
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO system							
	PH DOSING SYSTEM							
	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filtration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.							
	Nos							
	2	1				2.00	515000	1030000.0
	ELECTRIFICATION							
53	Supplying and wiring adopting loop system in existing PVC Conduit / casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 X1.5Sq.mm Cable confirming to the GTP, with a 6Amps flush type SP control switch shall be fixed on the existing plastic sheet / gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet. GROUP A (Page No. 05, Item No.2.1 KPWD SR 2014-15							
	b) Medium point above 3Mtr upto 6Mtr from tapping point to out let via switch	Point	2	2		4.00	245.0	980.0
	c) Long point above 6Mtr upto 10Mtr from tapping point to out let via switch	Point	2	2		4.00	363.0	1452.0
54	Supplying and flush mounting teak wooden box without front plank, made of not less than 12mm thick wood, after due groove cutting, Finishing with necessary cement plastering complete (Page No. 03, Item No. 1.6) KPWD SR 2014-15							
	(1.6.5) 4"x4"x3" (101x101x76mm)	Each	12	2		24.00	68.0	1632.0
	(1.6.1) 12"x12"x3" (300x300x76mm)	Each	6	2		12.00	116.0	1392.0
	(1.6.3)10"x7"x3" (254x178x76mm)	Each	6	2		12.00	87.0	1044.0
55	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc., and fixing on existing wooden or metal box using N.F. screws. (Page No. 17, Item No. 3.9) KPWD SR 2014-15							
	SqCM							
			2	6666.66		13333	0.25	3333.0
56	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete. upto 50mm conduit in brick wall (Page No. 03, Item No.1.7.1) KPWD SR 2014-15							
	Mtr							
			2	10		20.00	21.0	420.0

57	Supplying heavy gauge PVC Conduit Pipe 19/20 mm dia 2 mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering up to the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary. (Page No. 02, Item No. 1.3.1) KPWD SR 2014-15	Mtr							
			2	10			20.00	56.0	1120.0
58	Supplying and fixing PBBC/Bakelite straight or slant batten holder and wiring with 60w/230 volts lamps. (Page No. 20, Item No. 4.2) KPWD SR 2014-15	Each							
			4				4.00	88.0	352.0
59	Supplying patti type fluorescent tube light fitting of 2' - suitable for 14 watts fluorescent tube fitting, made out of M.S. Sheet and stove enameled with HF Electronic Ballast , locking type brass contact holders mounted on double fold type sheet base fully wired for use on 230 volts AC . Supply including T5 lamp. (Page No. 20, Item No. 4.5) KPWD SR 2014-15	Each							
			8				8.00	591.0	4728.0
60	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single core wire in open or concealed system of wiring with specified IS-694:1990 & confirming to GTP of GROUP -A 1.5 sqmm (Page No. 06, Item No. 2.5.2) KPWD SR 2014-15	Mtr							
			2	5			10.00	18.6	186.0
61	Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS lamp. (Page No. 20, Item No. 4.3) KPWD SR 2014-15	Each							
			8				8.00	747.0	5976.0

62	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm dia (Page No. 55, Item No. 7.1) KPWD SR 2014-15	No							
			2				2.00	2727.0	5454.0
							Total Construction Cost		2899954.000
63							Cost towards Preparation of DPR LS		29000.00
64							Cost towards PMC / Third Party inspection LS		29000.00
65							Cost towards BESCOM deposit Charges for Borewell LS		20000.00
66							Cost towards BESCOM deposit Charges for RO Plant LS		20000.00
							Sub Total		2997954.00
67							Miscellaneous and rounding off		2046.00
							Total		3000000.00

Certificate.

- 1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
- 2 The provisions made in the estimate are necessary and essential.
- 3 The workspot was inspected and work is found to be necessary.
- 4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.



Assistant Engineer

Assistant Executive Engineer

Executive Engineer
ಬ್ರಹ್ಮ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬ್ಯಾಂಕ್ ರಸ್ತೆ, ಬೆಂಗಳೂರು-560092

Technical Sanction
Accorded For 30.00 Lakhs
Head of A/C P3158
CER NO : "31" Dt: 29/01/18

TA CE (YMK)

14. PROVIDING AND FIXING ELECTRICAL FITTINGS IN WRD NO.
07.

BRUHAT BANGALORE MAHANAGARA PALIKE

Byatarayanapura Sub Division

Name of Work:- Providing and fixing electrical fittings in ward No 07

Est Cost : 40,00,000

Sl. No.	SR Page & SL No	Description of Work	Qty.	Rate Rs.	Unit	Amount
1		LED Street light. Supply of LED Streetlight with pressure die cast aluminum housing body with optimal heat sink for better thermal dissipation. Diffuser with Injection moulded & is made of polycarbonate material with high transmission index, delivering superior light output. Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%. CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains Current should not be greater than 0.1A to 0.7A & Surge Protection- Min 4KV along with Over voltage/Overload, short circuit/ miswiring protection. Compatible for pole mounting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Over load & Short circuit protection ensures reliable operation in spite of problem in output side. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with				
	26/4.35	minimized minimal tools. LED Light fixture with W System Power consumption. LED Efficiency>130lm/w at 1W & FixtureEfficiency >80lm/w with nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008 . Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part. Warranty of 5 Years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED source manufacture. Suitable for B1/B2 Roads as per IS 1944 Part I & Part II. LED Streetlight 65watts	120	18720.00	Each	2246400.00
2	108/17.12	Supplying and Fixing of.....mm dia class A GI pipe bracket up to 2 mtrs long bent at suitable angle and fixing to this bracket 1x40/2x40 watts fluorescent tube street light fitting of all capacities to GI or CI or rail or RCC pole / wall using suitable clamps, bolts, and nuts and wiring using suitable capacity wires. Using 32mm dia G.I.pipe	182	893.00	Each	162526.00
3	12/2.12	Wiring for lighting/power circuit using one of PVC insulated 1100v grade stranded Aluminium unsheathed wire single core/multi core cable in open or consealed system of wiring. a)4 sqmm.	600	7.50	Each	4500.00
4	5/7.4.5	Supplying of 1.1 KV LT UG cable having aluminum conductor PVC insulated, extruded inner sheathed, galvanized, steel strip (except 2CX10Sq.mm wire armoured) confirming to IS-3975:1990 (No. of Strip indicated in GTP) & extruded PVC outer sheathed armoured cable with specified IS-1554 Part-1:1988 & confirming to GTP of GROUP-A.3.5 core 25 sqmm	200	165.60	Per Mtr	33120.00

5	61/7.8.7	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required. In existing trench/duct.25 sqmm to 75 sqmm	200	34.80	Per Mtr	6960.00
6	AR	monitoring system Remotely control and and monitorable smart street light system by using web or mobile application .smart control system has hardware ruggedness over field issues like line cross, line short, lighting and any other irregularities in voltage. It has some features like 1.Remote lighting management.2.Precise lighting turnoff.3.Load ballancing 4.Load power regulation.5.Status tracking. It works on the basis of some of these features 1) Main Control Unit (Mother board) : Handles controlling , data handling and other communication process. 2) Communication unit: GSM/GPRS quad bandwith RS232 interface wireless communication unit 3) Gate Driver Unit: Firing angle controllable board for driving the thyristor 4) Switching Thyristor: SCR 110 AMPS dual thyristor modules for switching 5) Embedded Firmware: Firmware to control , handle , process the data and communicate it wirelessly.6) Metal Enclosure : IP66 weather prof metal enclosure.7) Transformers: Customized step down transformers for various purposes.8) Wiring and other device	30	51500.00	Each	1545000.00
7	64/7.21.7	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of the following sizes25 sqmm Long Barrel	72.00	20.59	Each	1482.48
		Sub Total				3999988.48
		Miscellaneous				11.52
		Total				4000000.00

CERTIFICATE :-

1. The place was inspected and the work is essential.
2. The provision made in the estimate are adequate and necessary and the work comes in the BBMP limit and is legitimate Charges on the BBMP funds.
3. The estimate is based on KPWD (Ele) S.R.2014-15 & Approved Rates.

M. M. D.
Asst. Engineer

Asst. Exe.Engineer

Technical Sanction
Accorded For
Head of A/C
CER NO :
Head of A/C Dt: 23/58



T. Chandan
EXECUTIVE ENGINEER
ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿ
ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿ-560092

TA **CE (YNA)**
NO: 32 Dt: 29/18
TA
CE